

Detached Epidermal Sheaths of *Lophogorgia chilensis* as a Food Source for *Polycera atra*

(Mollusca : Opisthobranchia)

BY

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THE EASTERN PACIFIC dorid nudibranch *Polycera atra* MacFarland, 1905, commonly feeds on species of the ectoproct genera *Bugula* (see MACFARLAND, 1966) and *Membranipora* (Lance, unpublished). Other species of polycerids for which data are available – e. g. the European *P. dubia* M. Sars, 1829, *P. nothus* (Johnston, 1838), and *P. quadrilineata* (Müller, 1776) – are also predators of various bryozoans (MILLER, 1961; THOMPSON, 1964). EDMUNDS (1961) suggests that the rare *P. elegans* Cantaine, 1835 may consume *Ciona*, as the nudibranch has been found on or near this solitary tunicate. Accordingly, it seems worthwhile to report the first direct evidence for a polycerid ingesting coelenterate tissues.

During April, 1974, several colonies of the gorgonian octocoral *Lophogorgia chilensis* (Verrill, 1868) were collected at 40 m in Scripps Submarine Canyon off La Jolla, California. A single individual of *Polycera atra* was found on one of the colonies. During a week in the laboratory, the nudibranch was observed to graze along the surface of the gorgonian. Although careful inspection revealed no visible damage to the colony, dissection of the nudibranch's gut and examination of extruded feces showed the presence of large quantities of *L. chilensis* spicules and some unidentifiable amorphous material.

Lophogorgia chilensis, in nature and in the laboratory, casts off sheaths ("involucra") consisting of epidermis, mucus and spicules. This shedding has been described as effective in removing fouling organisms from shallow-water gorgonians (KINZIE, 1973). *Lophogorgia chilensis* is only common below 25 m in the La Jolla area. At these depths the sloughing of involucra may serve to remove layers of detritus which accumulate rapidly at depths below the action of swells. Apparently the sheaths are rich in organic matter as they provide a suitable laboratory diet for *Caprella gorgonia* (LAUBITZ & LEWBEL, 1974), an amphipod known only in association with the

gorgonians *L. chilensis*, *Muricea californica* Aurivillius, 1931, and *M. fruticosa* Verrill, 1867 (see LAUBITZ & LEWBEL, *op. cit.*).

In a related study, GOMEZ (1973) found that another nudibranch, *Tritonia festiva* (Stearns, 1875 for 1873), eats the growing tips of *Lophogorgia chilensis*, causing considerable injury. Our observations suggest that subtidal individuals of *Polycera atra* are able to utilize cast-off involucra as food, without damaging their gorgonian hosts.

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